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J. K. CISLAK
HYPODERMIC NEEDLE

1,993,398

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Fig. 1

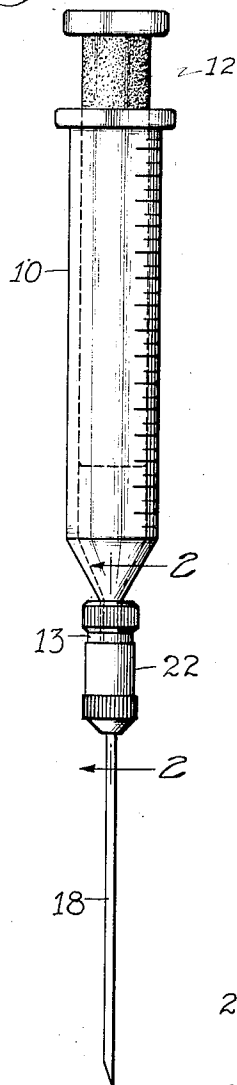


Fig. 2

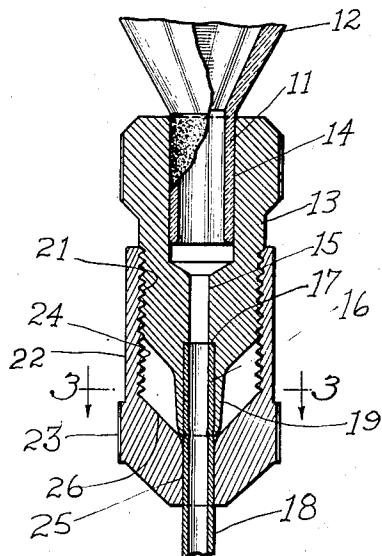


Fig. 3

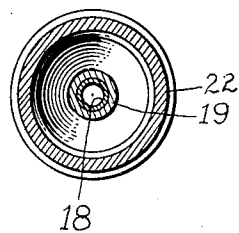


Fig. 4

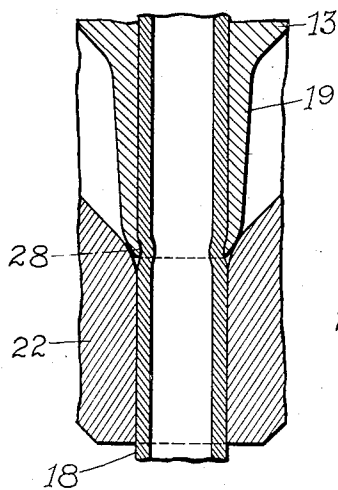
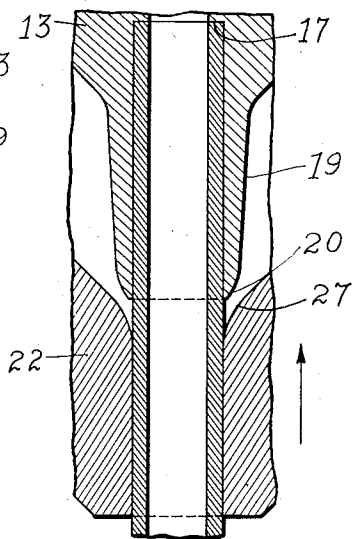


Fig. 5



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UNITED STATES PATENT OFFICE

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HYPODERMIC NEEDLE

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3 Claims. (Cl. 128—221)

The present invention is directed generally to a hypodermic syringe, but more particularly to the construction of the needle itself and the means of detachably fastening the needle to the lower end of the hypodermic nipple so as to make the same easy to replace without removing the lower part attached to the hypodermic nipple.

Heretofore it has been the practice to form a flange on the upper end of the needle proper which is sometimes in a partial spherical form so as to be seated into a spherical cavity of the nipple connection or needle supporting member, and when it becomes necessary to replace the needle in this type of hypodermic syringe it has been the practice heretofore to entirely remove the nipple connection from the nipple proper and remove the needle longitudinally through the top of the opening through which the nipple is connected. This practice has been found very unsatisfactory for the reason that in most cases the nipple is usually made of glass and frictionally secured to the connection which supports the needle. In removing this connection it is extremely difficult and entails considerable time to replace a broken needle, and it is therefore one of the primary objects of my invention to provide a simple needle construction and support for the needle which can be easily and quickly removed or replaced with the least amount of effort.

These and other objects are accomplished by providing a construction and arrangement of the various parts in the manner hereinafter described and particularly pointed out in the appended claims.

Referring to the drawing Fig. 1 is a side elevational view of the conventional form of hypodermic syringe having my improved needle attachment embodied therein.

Fig. 2 is an enlarged fragmentary cross sectional view showing in detail the manner in which the needle proper is detachably secured so as to form liquid tight fit into the needle connection.

Fig. 3 is an enlarged cross sectional view taken on the lines 3—3 in Fig. 2.

Fig. 4 is an enlarged fragmentary view showing the manner in which the needle connection grips the upper portion of the needle to form a liquid tight fit, and

Fig. 5 is a similar enlarged fragmentary cross sectional view showing the connecting members partially separated preparatory to tightening their grip on the upper portion of the needle.

It has been the practice heretofore in connection with hypodermic syringes in order to remove a broken needle to first remove the needle con-

nection from the barrel or nipple and longitudinally move the needle out through the top opening previously occupied by the barrel or nipple of the hypodermic syringe. With this type of construction the upper portion of the needle was provided with an annular flange, somewhat of a semi-spherical construction, which seated itself in the connection or needle support after which it was replaced on the barrel or nipple of the syringe. This arrangement entailed considerable inconvenience especially in removing the nipple from the needle support or connection. The present invention eliminates the necessity of removing this connection and permits the removal or insertion of the needle proper into the connection after the lower threaded barrel is loosened from the upper threaded connection.

In illustrating one form of my invention I have shown the same in connection with the conventional form of hypodermic syringe nipple or barrel indicated by the reference character 10, which is preferably, though not necessarily, made of glass, and is provided with a reduced cylindrical portion, as shown at 11. Reciprocally mounted in the barrel or nipple is a suitable plunger 12 of any well known construction. Frictionally secured to the reduced portion 11 of the nipple or barrel 10 is a connecting member 13, which in turn is provided with a cylindrical recess 14 into which the reduced portion 11 of the nipple 10 is inserted. Formed as a continuation of the cylindrical recess 14 and extending partway there-through is a longitudinal bore 15 which is enlarged slightly, as shown at 16, so as to form a shoulder 17 against which the upper end of the hypodermic needle 18 is adapted to be seated. The lower end of the connecting member 13 is considerably reduced and beveled, as shown at 19, and terminates in a curved and pointed end, as shown at 20. An intermediate portion of the connecting member 13 is provided with external threads, as shown at 21, and is adapted to receive in threaded engagement therewith a threaded sleeve or cap 22, which in turn is similarly provided with a knurled portion, generally indicated by the reference character 23. This sleeve is provided with an internal threaded portion 24 and is adapted to be mounted in threaded engagement with the external threaded portion 21 of the connecting member 13. Located in the longitudinal center of the cap 22 is a bore 25 through which the needle 18 may be inserted. The member 22 is also provided with a conically shaped or beveled recess 26 which terminates adjacent the bore 25 with a curved portion 27, which is

adapted to engage the curved portion 20 of the connecting member 13 for impinging or pressing inwardly the contiguous portion of the needle as is exaggerated at 27 in Fig. 4 of the drawing.

5 Obviously, when the internal threaded member or cap 22 is slightly unscrewed from its complementary external threaded connecting member 13 the needle 18 may be removed longitudinally from its socket 16 and seat 17 in the member 10 13 and a new needle replaced and secured therein so as to form a liquid tight connection by merely inserting the needle in the socket and securely screwing up or tightening the member 22 on the connecting member 13.

15 From the above description it will be readily seen that I have provided a very simple, efficient construction for quickly detaching and attaching or replacing a broken needle and one which will readily secure the needle in position so as to form 20 a liquid tight connection between the needle proper and the needle supporting member. In the drawing I have illustrated a relatively large hypodermic syringe construction but it will readily be understood that various sizes of needles as 25 well as connections embodying the same construction and principle of operation may be made without departing from the invention.

While in the above specification I have described one embodiment which my invention may 30 assume in practice, it will of course, be understood that the same is capable of modification and that modification may be made without departing from the spirit and scope of the invention as expressed in the following claims.

35 What I claim as my invention and desire to secure by Letters Patent is:

1. In combination with a hypodermic syringe, of a nipple therefor, a connecting member secured to said nipple, a needle seated in said 40 connection, a downwardly projecting tapered unbroken portion formed on said connecting member surrounding the seat formed therein for said

needle, and a second member secured to said first named member having a longitudinally extending aperture through which said needle freely extends, there being a beveled recess in said second named member surrounding said aperture 5 for engaging said tapered portion and compressing said tapered portion against said needle for detachably impinging said needle on its seat in said first named member.

2. In a combination with a hypodermic syringe, 10 of a nipple therefor, an exteriorly threaded member secured to said nipple, a downwardly extending unbroken tapered extension formed integrally with said member, there being a needle socket formed in said extension, a needle mounted in 15 said socket, and an interiorly threaded cap loosely embracing a portion of said needle and in threaded engagement with said first named member, said second named member having a tapered 20 recess arranged concentrically with respect to and adapted to engage said extension for compressing said extension against said needle and securing said needle in position.

3. In combination with a hypodermic needle, of 25 of a nipple therefor, an externally threaded member secured to said nipple having a socket formed therein, a needle seated in said socket, said member having a downwardly projecting unbroken tapered portion arranged concentrically with respect to and surrounding said socket, and an 30 internally threaded member mounted in threaded engagement with said first named member and having said needle extending freely therethrough, said second named member having a beveled recess surrounding and adapted to engage said 35 downwardly projecting unbroken portion for impinging a portion of said needle below the top thereof whereby said needle may be removed or replaced without removing said members from said nipple. 40

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